

Amendments to the Specification:

The Examiner identified some grammatical and typographical errors. In the Amendments to the Specification provided below, the Applicant corrects these errors.

At Page 15, line 8 the Applicant changes the misspelled "limitaition" to "limitation." Please see below the following replacement paragraph:

A variety of benefits are associated with this shallow weld puddle. The benefits include providing a higher form factor, which is more crack resistant than electrosag welds made with processes and procedures requiring deeper molten metal weld pools. The deeper the molten weld metal puddle (not the molten flux puddle) the lower the form factor, and the more crack prone the weld becomes. The shallower the molten weld metal puddle, the higher the form factor, and the more crack resistant the weld becomes. The weld puddle can be kept shallow by using a metal-cored wire instead of a solid wire. The thin metal sheath of a cored wire tends to create a shallower metal puddle. Additionally, the weld puddle can be kept shallow by increasing the number of wires used to make the weld (at any given current) will make the weld metal puddle shallower. By way of example and not of limitation ~~limitaition~~, 2 wires at 1000-amps create a shallower puddle than 1 wire at 1000-amps. 4-wires at 1000-amps creates a shallower puddle than 2 wires at 1000-amps, and so on. Furthermore, the weld puddle can be kept shallow by using an oscillating guide tube to spread the weld puddle, instead of using higher voltages to spread the weld puddle, creates a shallower puddle. Further still, the welding puddle can be kept shallow by using a smaller gap so that the weld cavity fills faster, thereby creating a shallower puddle. Since the vertical-rate-of-rise is faster, more base metal has to be heated faster—taking heat way from the weld puddle, and making it shallower. Finally, the welding puddle can be kept shallow by using smaller diameter wires (1/16" dia instead of 1/8" or 3/32"). At any given current, a smaller diameter wire will yield a shallower puddle than a larger diameter wire. For instance, a weld made with a 1/16" dia wire, at 1000-amps, will produce a shallower puddle than a 3/32" dia wire at 1000-amps. A 3/32" dia wire will produce a shallower puddle than a 1/8" dia wire, and so on.

At Page 18, line 11-13, the two sentences have been combined and “to” has been changed to “too” in line 12. Please see below the following replacement paragraph:

However, in certain welds such as box column or keyhole welds there are no copper shoes and hence no loss of molten slag. In such instances, small “buttons” of insulators are used. These small buttons add minimal amount of flux to the molten slag bath and thereby permit tall welds without appreciably increasing the depth of the flux. This corrects the problem generated by methods which coat the entire guide tube. When the entire guide tube is coated, it generates a molten slag bath which is too deep, thereby causing incomplete fusion in a box column or keyhole weld. Therefore, in a box column or keyhole weld, it would not be possible to use a guide tube with flux enveloped around the guide tube. The flux on the guide tube would cause ~~caused~~ the molten flux puddle to become deeper and deeper as the flux melted from the guide tube, when ~~tube. When~~ the flux level became too deep. ~~to deep.~~ The weld cavity would experience such incomplete fusion and flux inclusion.